

EXHIBIT 19

U.S. Patent No. 7,769,050

Claim 1	Identification
<p>1. A method for providing wireless communication, the method comprising:</p>	<p>Regardless of whether the preamble is limiting, Verizon performs a method of providing wireless communication. For example, Verizon owns, provides, and manages Wi-Fi equipment, such as Access Points (i.e., “routers” or “extenders”).</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>2.4 Equipment. Equipment includes Verizon-provided digital adapters; television set top boxes, digital video recorders video media servers, IP client boxes; peripheral devices; routers; extenders; or optical network terminals. Equipment includes a router or extender you may purchase from Verizon or a third party. Equipment does not include any Other Devices that you attach to use with the Services, or Retired Equipment. The Equipment provided by Verizon for use with the Services may be new or refurbished.</p> <p>https://www.verizon.com/about/terms-conditions/verizon-customer-agreement</p> <p>9.2 Verizon Ownership. Unless you have purchased your Equipment or we have designated the Equipment as Retired, you acknowledge and agree that at all times ownership of Equipment shall remain with us and that this Agreement allows you to use Equipment only in connection with your lawful receipt and use of the Services. You are responsible for Equipment which is lost, damaged by fire, water, theft or events of Force Majeure.</p> <p><i>Id.</i></p> <p>Verizon Access Points include Wi-Fi 6 (802.11ax) functionality.</p> </div>

Claim 1	Identification
	<p>What makes the Verizon Router faster?</p> <p>It features Wi-Fi 6E technology, the next-generation wireless standard that provides much higher data rates and increased capacity – almost 3 times faster than Wi-Fi 5.</p> <p>But the Verizon Router offers much more than just a simple speed boost. Its Wi-Fi 6E technology delivers an improved network connection that sets a new standard for performance. So you can connect multiple devices at once with increased range, improved power efficiency and enhanced security.</p> 

Claim 1	Identification
	<h1 data-bbox="508 267 1622 414">How to Identify Verizon 5G Home Equipment</h1> <p data-bbox="508 491 1199 523">Verizon Internet Gateway (WNC-CR200A)</p> <div data-bbox="508 589 1438 1241"></div> <p data-bbox="498 1258 1269 1290">https://www.verizon.com/support/knowledge-base-220089/</p>

Claim 1	Identification
	<p>Verizon Internet Gateway (ASK-NCQ1338 / ASK-NCQ1338FA / ARC-XCI55AX)</p>  <p>This router is a white cube with a circular base.</p> <p><i>Id.</i></p>

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	<p>Verizon Router (CR1000A) paired with LV65</p>  <p>This router is a long, white rectangle with a circular base. It is typically paired with the LV65 receiver. Please review the support links for both the receiver and the CR1000A router.</p> <p>The equipment SKU for this router is CR1000A.</p> <p>→ For additional info visit the CR1000A support page.</p> <p><i>Id.</i></p>

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	<p>5G Home Router (LVSKR1)</p>  <p>This router is a white cylinder with mesh on the bottom half that looks similar to a speaker. The equipment SKU for this router is LVSKR1. → For additional info visit the LVSKR1 support page.</p>	

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	<p>Model G3100</p> <p>The Fios Router is an 11ax Tri-band concurrent Wi-Fi router that supports the latest Wi-Fi technology. It offers seamless roaming, band steering, AP steering, and Self-Organizing Networks (SON) technology. It's also equipped with a third radio to use for Wi-Fi backhaul to the Fios Extender. 11ax Tri-band brings OFDMA and the highest throughput to users.</p> <p>Industrial design</p>  <p><i>Id.</i></p>	
1[a] providing a plurality of frequency channels in each of a	Verizon provides multiple access points, for example, within a multi-family or mixed-use development. Using these access points, Verizon provides a plurality of frequency channels in each of a plurality of portions of a service area.	

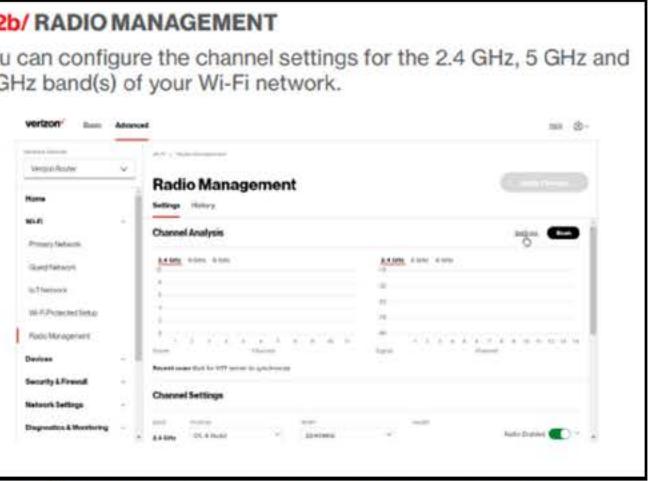
Claim 1	Identification
plurality of portions of a service area,	 <p data-bbox="920 290 1431 409">Verizon Enhanced Communities</p> <p data-bbox="973 437 1374 510">Verizon Enhanced Communities can help you provide your residents and tenants with the ultimate amenity of Verizon services.</p> <p data-bbox="534 776 787 874">Residential property owners & developers</p> <p data-bbox="534 891 808 1049">Today's prospective residents go out of their way to find properties that support their digital lifestyle. Whether you own a single property or an entire portfolio, Verizon provides a solid foundation for high-performance returns. Simply put - your residents will love Verizon. And so will you.</p> <p data-bbox="857 776 1110 874">Verizon property programs & services</p> <p data-bbox="857 891 1132 1049">With Verizon your residents have the bandwidth they need to enjoy Whole-Home Wi-Fi, streaming video, low lag gaming, access to special programs, services, and applications. Also, for those of your residents who work from home, reliable, fast and low-latency internet services are a huge plus point.</p> <p data-bbox="1184 776 1374 842">Commercial properties</p> <p data-bbox="1184 858 1438 1016">Enhance your commercial property while signing and retaining more tenants, with the future-ready possibilities of Verizon. Your business tenants need the speed of 100% fiber optic network to stay vital in today's competitive environment—and so do you.</p> <p data-bbox="1507 776 1782 874">Verizon Enhanced Communities Value Program</p> <p data-bbox="1507 891 1782 984">From current 100% fiber optic internet speeds to future 5G availability and more, see how the Verizon Enhanced Communities Value Program can deliver what your residents demand.</p> <p data-bbox="498 1065 1094 1095">https://www.verizon.com/home/communities/</p>

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	<p>17.3.8.4.2 Channel numbering</p> <p>Channel center frequencies are defined at every integer multiple of 5 MHz above the channel starting frequency. The relationship between center frequency and channel number is given by Equation (17-27):</p> $\text{Channel center frequency} = \text{Channel starting frequency} + 5 \times n_{ch} \text{ (MHz)} \quad (17-27)$ <p>where</p> $n_{ch} = 1, \dots, 200.$ <p>Channel starting frequency is defined as <code>dot11ChannelStartingFactor</code> \times 500 kHz or is defined as 5 GHz for systems where <code>dot11OperatingClassesRequired</code> is false or not defined.</p> <p>For example, <code>dot11ChannelStartingFactor</code> = 10000 indicates that Channel 0 center frequency is 5.000 GHz. A channel center frequency of 5.000 GHz shall be indicated by <code>dot11ChannelStartingFactor</code> = 8000 and n_{ch} = 200. An SME managing multiple channel sets can change the channel set being managed by changing <code>dot11ChannelStartingFactor</code>.</p>
1[b] wherein the plurality of frequency channels are in an unlicensed frequency band	802.11-2016 The above frequency channels are in the unlicensed 2.4, 5, or 6 Ghz bands.

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	<table border="1" data-bbox="508 264 1284 882"> <caption data-bbox="798 270 994 295">Wi-Fi generations</caption> <thead> <tr> <th data-bbox="544 303 692 393">Generation</th> <th data-bbox="692 303 851 393">IEEE standard</th> <th data-bbox="851 303 994 393">First Approved</th> <th data-bbox="994 303 1241 393">Maximum link rate (Mbit/s)</th> <th data-bbox="1241 303 1284 393">Radio frequency (GHz)</th> <th data-bbox="1284 270 1305 287">V</th> <th data-bbox="1305 270 1326 287">T</th> <th data-bbox="1326 270 1347 287">E</th> </tr> </thead> <tbody> <tr> <td data-bbox="544 434 692 458">Wi-Fi 7</td><td data-bbox="692 434 851 458">802.11be</td><td data-bbox="851 434 994 458">2019-03-21</td><td data-bbox="994 434 1241 458">1376 to 46120</td><td data-bbox="1241 434 1284 458">2.4</td><td data-bbox="1284 434 1305 458">5</td><td data-bbox="1305 434 1326 458">6</td><td data-bbox="1326 434 1347 458"></td></tr> <tr> <td data-bbox="544 483 692 507">Wi-Fi 6/6E</td><td data-bbox="692 483 851 507">802.11ax</td><td data-bbox="851 483 994 507">2014-03-27</td><td data-bbox="994 483 1241 507">574 to 9608</td><td data-bbox="1241 483 1284 507">2.4</td><td data-bbox="1284 483 1305 507">5</td><td data-bbox="1305 483 1326 507">6</td><td data-bbox="1326 483 1347 507">[1]</td></tr> <tr> <td data-bbox="544 532 692 556">Wi-Fi 5</td><td data-bbox="692 532 851 556">802.11ac</td><td data-bbox="851 532 994 556">2008-09-26</td><td data-bbox="994 532 1241 556">433 to 6933</td><td data-bbox="1241 532 1284 556">↓^[2]</td><td data-bbox="1284 532 1305 556">5</td><td data-bbox="1305 532 1326 556"></td><td data-bbox="1326 532 1347 556"></td></tr> <tr> <td data-bbox="544 580 692 605">Wi-Fi 4</td><td data-bbox="692 580 851 605">802.11n</td><td data-bbox="851 580 994 605">2003-09-11</td><td data-bbox="994 580 1241 605">72 to 600</td><td data-bbox="1241 580 1284 605">2.4</td><td data-bbox="1284 580 1305 605">5</td><td data-bbox="1305 580 1326 605"></td><td data-bbox="1326 580 1347 605"></td></tr> <tr> <td data-bbox="544 629 692 654">(Wi-Fi 3)*</td><td data-bbox="692 629 851 654">802.11g</td><td data-bbox="851 629 994 654">2000-09-21</td><td data-bbox="994 629 1241 654"></td><td data-bbox="1241 629 1284 654">2.4</td><td data-bbox="1284 629 1305 654"></td><td data-bbox="1305 629 1326 654"></td><td data-bbox="1326 629 1347 654"></td></tr> <tr> <td data-bbox="544 678 692 703">(Wi-Fi 2)*</td><td data-bbox="692 678 851 703">802.11a</td><td data-bbox="851 678 994 703">1997-09-16</td><td data-bbox="994 678 1241 703"></td><td data-bbox="1241 678 1284 703">6 to 54</td><td data-bbox="1284 678 1305 703"></td><td data-bbox="1305 678 1326 703">5</td><td data-bbox="1326 678 1347 703"></td></tr> <tr> <td data-bbox="544 727 692 752">(Wi-Fi 1)*</td><td data-bbox="692 727 851 752">802.11b</td><td data-bbox="851 727 994 752">1997-12-09</td><td data-bbox="994 727 1241 752">1 to 11</td><td data-bbox="1241 727 1284 752">2.4</td><td data-bbox="1284 727 1305 752"></td><td data-bbox="1305 727 1326 752"></td><td data-bbox="1326 727 1347 752"></td></tr> <tr> <td data-bbox="544 776 692 801">(Wi-Fi 0)*</td><td data-bbox="692 776 851 801">802.11</td><td data-bbox="851 776 994 801">1991-03-21</td><td data-bbox="994 776 1241 801">1 to 2</td><td data-bbox="1241 776 1284 801">2.4</td><td data-bbox="1284 776 1305 801"></td><td data-bbox="1305 776 1326 801"></td><td data-bbox="1326 776 1347 801"></td></tr> <tr> <td colspan="8" data-bbox="544 825 1284 850">*Wi-Fi 0, 1, 2, and 3 are unbranded common usage.^{[3][4]}</td></tr> </tbody> </table> <p data-bbox="498 894 994 918">https://en.wikipedia.org/wiki/Wi-Fi_6</p> <div data-bbox="519 972 1757 1315" style="border: 1px solid black; padding: 10px;"> <p data-bbox="519 972 1757 1315">3. We authorize two different types of unlicensed operations—standard-power and indoor low-power operations. We authorize standard-power access points using an automated frequency coordination (AFC) system. These access points can be deployed anywhere as part of hotspot networks, rural broadband deployments, or network capacity upgrades where needed. We also authorize indoor low-power access points across the entire 6 GHz band. These access points will be ideal for connecting devices in homes and businesses such smartphones, tablet devices, laptops, and Internet-of-things (IoT) devices to the Internet. As has occurred with Wi-Fi in the 2.4 GHz and 5 GHz bands, we expect that 6 GHz unlicensed devices will become a part of most peoples' everyday lives. The rules we are adopting will also play a role in the growth of the IoT; connecting appliances, machines, meters, wearables, and other consumer electronics as well as industrial sensors for manufacturing.⁴</p> </div> <p data-bbox="498 1323 713 1348">FCC 20-51 at 3.</p>	Generation	IEEE standard	First Approved	Maximum link rate (Mbit/s)	Radio frequency (GHz)	V	T	E	Wi-Fi 7	802.11be	2019-03-21	1376 to 46120	2.4	5	6		Wi-Fi 6/6E	802.11ax	2014-03-27	574 to 9608	2.4	5	6	[1]	Wi-Fi 5	802.11ac	2008-09-26	433 to 6933	↓ ^[2]	5			Wi-Fi 4	802.11n	2003-09-11	72 to 600	2.4	5			(Wi-Fi 3)*	802.11g	2000-09-21		2.4				(Wi-Fi 2)*	802.11a	1997-09-16		6 to 54		5		(Wi-Fi 1)*	802.11b	1997-12-09	1 to 11	2.4				(Wi-Fi 0)*	802.11	1991-03-21	1 to 2	2.4				*Wi-Fi 0, 1, 2, and 3 are unbranded common usage. ^{[3][4]}							
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<p>1[c] wherein a same frequency channel of the plurality of frequency channels is provided for use in two or more adjacent portions of the service area; and</p>	<p>The WiFi 6 standard includes the HE spatial reuse operation, in which the same frequency channel of the plurality of frequency channels is provided in two or more adjacent portions of the service area.</p> <p>For example, this is used for different basic service sets (BSS) to operate within a dense environment. Stations (STA) identify whether physical layer protocol data units (PPDUs) originate from within their own BSS when the sets are overlapping.</p> <p>T.6 BSS color and spatial reuse</p> <p>The BSS color is an identifier of the BSS and is used to assist a receiving STA in identifying the BSS from which a PPDU originates so that the STA can follow the channel access rules to perform spatial reuse. The objective of spatial reuse operation is to allow the medium to be used more often between OBSSs in dense deployment scenarios by the early identification of signals from OBSSs and interference management. See 26.10.</p> <p>802.11ax</p> <p>26.2 HE channel access</p> <p>26.2.2 Intra-BSS and inter-BSS PPDU classification</p> <p>A STA shall classify a received PPDU as an inter-BSS PPDU if at least one of the following conditions is true:</p> <ul style="list-style-type: none"> — The RXVECTOR parameter BSS_COLOR is not 0 and is not the BSS color of the BSS of which the STA is a member. <p>A STA shall classify the received PPDU as an intra-BSS PPDU if at least one of the following conditions is true:</p> <ul style="list-style-type: none"> — The RXVECTOR parameter BSS_COLOR of the PPDU carrying the frame is the BSS color of the BSS of which the STA is a member or the BSS color of any TDLS links to which the STA belongs if the STA is an HE STA associated with a non-HE AP. <p>802.11ax</p>

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1[d] mitigating interference associated with external interference sources by making particular channels of the plurality of channels available for use by network nodes disposed in the portions of the service area according to a two tier scheduling strategy,	<p>This mitigates interference associated with external interference sources (which is, for example, the case in a dense deployment scenario) by making particular channels of the plurality of channels available for use by the network nodes according to the two tier scheduling strategy described in limitations 1[e] -1[g].</p> <div data-bbox="498 453 1649 727" style="border: 1px solid black; padding: 10px;"> <p>T.6 BSS color and spatial reuse</p> <p>The BSS color is an identifier of the BSS and is used to assist a receiving STA in identifying the BSS from which a PPDU originates so that the STA can follow the channel access rules to perform spatial reuse. The objective of spatial reuse operation is to allow the medium to be used more often between OBSSs in dense deployment scenarios by the early identification of signals from OBSSs and interference management. See 26.10.</p> </div> <p>802.11ax</p>
1[e] wherein a first tier of the scheduling strategy includes assigning the plurality of frequency channels to each portion of the service area at a relatively slow pace;	<p>The first tier of the scheduling strategy is to assign channels at a slow pace, e.g., when the device is set up or when a channel is scanned for interference.</p> <p>For example, channels are scanned or selected when using Verizon routers.</p>

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	<p>3.2b/ RADIO MANAGEMENT</p> <p>You can configure the channel settings for the 2.4 GHz, 5 GHz and 6 GHz band(s) of your Wi-Fi network.</p>  <p>The screenshot shows the 'Radio Management' section of the Verizon Router's web interface. The left sidebar includes options like 'Primary Network', 'Guest Network', 'Wi-Fi Network', 'Wi-Fi Protected Setup', 'Radio Management' (which is selected and highlighted in red), 'Devices', 'Security & Firewall', 'Network Settings', and 'Diagnostics & Monitoring'. The main content area is titled 'Radio Management' and contains two tabs: 'Settings' (selected) and 'History'. Under 'Settings', there are two main sections: 'Channel Analysis' and 'Channel Settings'. 'Channel Analysis' displays a heatmap of signal strength across various channels (1-11 for 2.4 GHz, 36-65 for 5 GHz, 149-165 for 6 GHz) for both 2.4 GHz and 5 GHz bands. 'Channel Settings' allows the user to select a channel for each band and includes an 'Auto-Deploy' button. A note at the bottom of this section states: 'Recent usage data for Wi-Fi network optimization'.</p> <p>https://www.verizon.com/supportresources/content/dam/verizon/support/consumer/documents/internet/verizon-cr1000b-router-guide.pdf</p>

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	<p><i>To view and configure the channel settings:</i></p> <ol style="list-style-type: none"> 1. From the Advanced menu, select Wi-Fi and then click Radio Management. 2. Click on Settings on the top right-hand side of the Radio Management page to configure the channel scan settings: <div style="border: 1px solid black; padding: 10px; text-align: center;">  <ul style="list-style-type: none"> • Select the Keep my channel selection during power cycle check box to save your channel selection when your Verizon Router is rebooted. • Enable DFS channels during channel scan: DFS channels are enabled by default during channel scans. <p>Note: DFS channels are a subset of the 5 GHz network that is shared with radar systems. Some consumer devices do not support these channels and cannot connect to routers using them. Examples include some media streaming devices. Disabling this feature will allow the router to select the best available channel to broadcast on and allow these devices to connect.</p> <ul style="list-style-type: none"> • Press Apply Changes to save the changes. </div> <p><i>Id.</i></p>
1[f] wherein a second tier of the scheduling strategy includes allocating the assigned frequency channels resulting from the first tier of the scheduling strategy among the network nodes disposed in each portion of the	<p>The second tier of the scheduling strategy is to allocate the assigned frequency channels resulting from the first tier of the scheduling strategy among the network nodes disposed in each portion of the service area in real-time, through the spatial reuse function.</p> <p>Through the spatial reuse operation, frequency channels are allocated by BSS color (marking PPDUs as inter-BSS).</p>

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service area in real-time; and	<p>An example of OBSS PD SR operation is shown in Figure 26-12. In this example, STA SR S2</p> <ul style="list-style-type: none"> — Receives the PPDU from S1 and, if it classifies the PPDU as inter-BSS PPDU, ignores the PPDU using OBSS PD-based spatial reuse with non-SRG OBSS PD, starts the OBSS PD SR transmit power restriction period 1 with TX_PWRmax 1, and decrements its backoff counter until the reception of the PPDU from D1. — Receives the PPDU from D1 and, if it classifies the PPDU as inter-BSS PPDU, ignores the PPDU (if it chooses to do so) using OBSS PD-based spatial reuse with non-SRG OBSS PD, starts the OBSS PD SR transmit power restriction period 2 with TX_PWRmax 2, and decrements its backoff counter until the reception of the PPDU from S1'. — Defers during the TXOP S1" set by the intra-BSS PPDU from S1" that belongs to its own BSS and, at the end of the TXOP S1", resumes the decrement of its backoff until the reception of the PPDU from S1'. — Receives the PPDU from S1' and, if it classifies the PPDU as SRG PPDU, ignores the PPDU (if it chooses to do so) using OBSS PD-based spatial reuse with SRG OBSS PD, starts the OBSS PD SR
802.11ax	<p>transmit power restriction period 3 with TX_PWRmax 3, and decrements its backoff counter until the counter reaches zero because it does not receive the PPDU from D1'.</p> <ul style="list-style-type: none"> — Starts transmitting a PPDU with a TX_PWRmax equal to $\min(\text{TX_PWRmax 1, TX_PWRmax 2, TX_PWRmax 3})$ and respects this transmit power restriction until the end of the SR TXOP. <p>26.10.3.2 PSR-based spatial reuse initiation</p> <p>An HE STA identifies an PSR opportunity if the following two conditions are met:</p> <ol style="list-style-type: none"> a) The STA receives a PHY-RXSTART.indication corresponding to the reception of a PSRR PPDU that is identified as an inter-BSS PPDU (see 26.2.2).

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1[g] wherein the network nodes are selected for simultaneous use of said particular channels as a function of spatial characteristic groupings of said network nodes.	As a function of the spatial characteristic groupings of said network nodes (i.e., BSS), the network nodes are selected for simultaneous use of particular channels.

